United States Department of Agriculture

Natural Resources Conservation Service
West National Technology Support Center
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Subject: Lesser Prairie Chicken Initiative Vegetation Monitoring Protocol

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To: Colorado, Kansas, New Mexico, Texas, Oklahoma

File Code: 190 - Range and Pasture - Biology

The lesser prairie-chicken *(Tympanuchus pallidicinctus)* is a candidate species under the ESA. The lesser prairie-chicken (LEPC) is a species of prairie grouse that occupies a five-state range encompassing portions of Texas, New Mexico, Oklahoma, Kansas and Colorado. LEPC populations need large tracts of relatively intact native grasslands and prairies to thrive. The vast majority (approximately 95 %) of LEPC habitat occurs on privately owned and operated lands across the five-state range. Therefore, the voluntary actions of private landowners are the key to maintaining, enhancing, restoring and reconnecting habitat for the species.

The LPCI is a conservation initiative based upon a targeted conservation systems approach to implement specific conservation practices to manage and enhance the LEPC and expand their habitats within the context of sustainable ranching.

The June, 2011 USFWS Conference Report for NRCS LPCI contains monitoring recommendations in APPENDIX III - LPCI Science Support Element Monitoring LPCI Effectiveness. NRCS has agreed to conduct assessments to measure the response to conservation practices applied with LPCI funds, assess the effectiveness of implementing conservation practices and measures, and adaptively improve program implementation each year. These measures ensure that rangelands are managed sustainably to provide continued ecological processes, forage for livestock and wildlife, and habitat for the LEPC.

The Monitoring Protocol and Vegetation Monitoring Protocols that follow are to be conducted annually on all LPCI contracts. Questions about the protocols may be addressed to Gene.Fults@por.usda.gov , Reggie.Blackwell@ftw.usda.gov , Marcus.Miller@por.usda.gov, Philip.Barbour@ftw.usda.gov or LPCI Science Advisor Christian.Hagen@oregonstate.edu

Vegetation Monitoring Protocol for Lesser Prairie-Chicken Initiative Contracts.

The goal of the protocol is to consistently monitor trend in vegetation structure on individual properties voluntarily applying management under initiative contract. Closely follow the directions to allow the data to be combined across the ecological regions and assess trend in vegetation at a landscape scale. Monitoring and vegetation protocols below address the Conference Report's guidance on assessment and monitoring protocols that the SWAT and FO will perform on individual properties.

A. Monitoring protocol:

1. Transfer from the Prescribed Grazing Plan

- Species composition by weight for each Key Area and Ecological Site.
- Rangeland Health assessment for each ecological site.
- Copy of Ecological Site Descriptions.

2. Document annual precipitation. Utilize available ranch records or weather services on the web such as PRISM and Drought Monitor for prior year precipitation records and recent weather conditions. This is valuable baseline information to record in client file and will help explain trend.

3. Initial transect measurements will be done during the growing season being careful to avoid disturbance during the breeding and nesting season.

4. Annual vegetation protocol measurements will be scheduled to be repeated within 10 days plus or minus of initial measurement date. Primary consideration is plant community phenology.

B. Vegetation protocol

Annually monitor each vegetation treatment or grazing management area using a minimum of two 150 ft. transects per ecological site. Use the following considerations:

1. Monitor all Ecological Site (ES) rated HIGH for LEPC use.
2. Monitor the ES with the most potential to change in LEPC habitat.
3. Nesting and Brood Raising habitat will be prioritized over Leks.
4. Monitor the ES that is the KEY AREA as identified in the Prescribed Grazing Plan.
5. Review Ecological Site Descriptions is situations where multiple ESs occur within the treatment area. If vegetation responses are expected to be dissimilar across multiple ESs, then monitor each differing ES rated for LEPC use.
6. Monitor all rated ES where expected change in monitored indicators will occur relatively fast due to treatment type.
7. Accessibility.
8. Relative size.

Dig a soil pit to confirm the ecological site's soil component (one-time effort). Location of beginning and end points of transect will be aligned from northeast to southwest and will be geo-referenced with a GPS unit. The 0.0 mark will be at the northeast end. The beginning point should be established so the transect stays within the selected area of a single ecological site. Lay out the tape as close to the ground as possible, straight and tight. Walk on the south side of

the transect tape. Avoid disturbing the vegetation structure on the north side of the tape. Transect data will be collected in the following order:

1. Photos – Legibly identify the transect on a dry write board or paper form with:
Ecological Site Name
Date
Field number
Transect number
Data collector
LPCI Contract number

Place photo board at 0.0 mark, step back 10 feet, take a photo centered on the tape focused to the center of the transect. Make sure the photo board is visible and legible. Consider the best light conditions. Additional photos need not have the photo board as long as the jpg file name is affiliated with the first photo. (5 minutes)

2. Plant height – Standing on the south side of the tape, measure the height of the tallest living or dead plant part (including seed heads) intersecting a 12 inch diameter vertical cylinder next to and on the north side of the tape at the designated transect mark. At the 15 ft mark, place the base of the yardstick 6 inches to the north of the tape. Measure one each of the tallest herbaceous and tallest woody plant using a separate 6 inch ruler to determine the highest point that the plant part exits the cylinder. Enter 0 if not present. Do not move the yardstick. Do not stretch the plant while making the measurement. The plant need not be rooted within the 12 inch diameter circle. Subsequent observations are made every 10 feet. Plant height determinations are based on the following plant height categories. (15 minutes)

Plant Height	Record to:
0’ to 3 feet:	Nearest inch.
3’ 1” to 10’.0” feet	Nearest foot
> 10’ 1” feet	Nearest 5 feet

3. Visual Obstruction Reading (VOR) – This protocol is observed at a distance from the tape on the north side of the tape. At the 20 foot mark place the VOR pole next to the tape on the north side. At a perpendicular distance of 6.5 feet, place a 1.5 foot tall (think predator) sighting pole. Peer over the pole towards the VOR pole. Count the number of completely horizontally obscured bands starting at the bottom. Record each band to the nearest quarter with the top of the first band being 1. The VOR pole is 5 feet tall and 1-inch diameter with alternating colored (white and black) bands 4 inches in length. In the case of a split or gap between obscured bands record only the lower bands that are completely obstructed. (10 minutes)

4. Line Point Intercept (LPI) – Stand on the south side of the tape. Begin at the 0 mark. In a vertical decent, lower the end of a wire flag through the foliar canopy toward the immediate north side of the tape mark. Record growth forms in the order that the wire touches them. Indicate by asterisk (*) if the plant hit touches a plant more than 5 feet tall. Include multiple hits on the same plant. Multiple litter hits are allowed. Record confirmed hits, not near misses. Sand sagebrush and Shinnery oak are recorded separately as species. Include Yucca and Prickly pears

with other woody stemmed vegetation in the shrub category. Bare ground (BG) is recorded at the mark when no canopy hits are recorded above the exposed soil. Repeat every 3 feet. (25 minutes)

5. Plant phenology – Observe the phenological condition of several plants for each of the growth forms. Mark the most common condition. Mark more than one phenological stage if cool-season grasses are present.

NOTE: Some sites may exhibit strong swale and dune geomorphology and the site perimeter seldom extends to 150 feet. In these cases, use 50 ft. transects. Identify LPI foliar canopy at every 1 foot mark. Measure plant height at every 5 feet marks. Record VOR at every 10 feet marks.

REPORT Protocol: Field Office maintains photos and data to report the transect pairs by ESD. Contract identification and landowner confidentiality stays at the field office level. Report to the next designated level at the end of the annual monitoring season.

Background

Rationale for the establishment of these protocols and are relevants to monitoring on-site conditions. Per the 30 June 2011 Fish and Wildlife Service's (Service) Conference Report (Report) for the NRCS Lesser Prairie-Chicken Initiative (LPCI).

"Monitoring LPCI Effectiveness - Baseline assessments of vegetation will be collected at project areas consistent with NRCS NRI protocols to assess vegetation response at the individual ranch level. In turn, as multiple projects are completed a portfolio of habitat change can readily be quantified and linked back to changes in abundance and/or distribution of populations."

"Effects of the Action - Adverse Effect: (I) Physical disturbance (including noise). Two conservation measures were specifically developed to minimize physical disturbances to LPC during the critical breeding and nesting season. The first conservation measure establishes a non-disturbance period and distance from known leks. The second relevant conservation measure facilitates the creation of site-specific criteria as needed when the specific local and landscape conditions for a particular site require a local conservation strategy."

"The primary adverse effect of concern to the Service is physical disturbance during the LPC breeding and nesting season (considered March 1 through July 15). The bird's response ("f1ushing"/escape behavior) may place individual birds at greater risk to predation when they leave cover."

"Core practices are critical to addressing the targeted resource concern(s) for the Initiative and achieving the desired environmental outcome(s). All conservation plans developed using LPCI funding must include documentation that an alternative containing the core practices was presented to the decision maker. Every contract developed under the LPCI must include Upland Wildlife Habitat Management (645). In cases where livestock are present, Prescribed Grazing (528) will be used to support Upland Wildlife Habitat Management. Contracts must be supported by a

conservation plan that contains a core practice documented as either planned within the contract period or already applied on the land under contract."

- "Upland Wildlife Habitat Management - This core management practice will be applied or maintained annually to treat and manage wildlife, in particular LPC resource concerns identified during the conservation planning process. Application of this practice shall remove or reduce habitat limiting factors, in their order of significance, as indicated by results of the LPC wildlife habitat evaluation guide (Appendix II) or other acceptable assessments."

- "Prescribed Grazing - At the individual project and landscape scale, the use of this practice standard under the LPCI is expected to produce a mosaic of vegetation structure and composition to benefit the LPC (e.g., create as needed at the appropriate scale areas of greater forb and resulting insect production, create areas of higher residual cover for nesting birds, or create open lek habitat)."

APPENDIX III

Baseline assessments of vegetation will be collected at project areas consistent with NRCS NRI protocols to assess vegetation response at the individual ranch level. In turn, as multiple projects are completed a portfolio of habitat change can readily be quantified and linked back to changes in abundance and/or distribution of populations.

LEPC Photo board

Eco Site:

Date:

Field number:

Transect number:

Data Collectors:

LPCI contract:

LPCI plant height

Date	
Eco site	
Field number	
Transect number	
collector	
LPCI contract #	

Mark	Herb	Woody
15		
25		
35		
45		
55		
65		
75		
85		
95		
105		
115		
125		
135		
145		

Plant Height	**Record to:**
0’ to 3 feet:	Nearest inch.
3’ 1” to 10’.0” feet	Nearest foot
> 10’ 1” feet	Nearest 5 feet

LPCI Visual Obstruction Reading

Date	
Eco site	
Field number	
Transect number	
collector	
LPCI contract #	

MARK	VOR
20	
40	
60	
80	
100	
120	
140	

LPCI	**Line Point Intercept**
Date	
Eco site	
Field number	
Transect number	
Collector	
LPCI contract #	

code	**Growth Habit**
TG	Tufted Grass
SG	Sod Grass
FO	Forb
SH	Shrub*
SS	Sand Sagebrush*
SO	Shinnery Oak*
WL	Woody Litter
HL	Herbaceous Litter
OL	Organic Litter
AL	Artificial Litter
BG	Bare Ground
*	Add * if > 5 feet tall

Mark	1	2	3	4	5	6	BG		Mark	1	2	3	4	5	6	BG
0									78							
3									81							
6									84							
9									87							
12									90							
15									93							
18									96							
21									99							
24									102							
27									105							
30									108							
33									111							
36									114							
39									117							
42									120							
45									123							
48									126							
51									129							
54									132							
57									135							
60									138							
63									141							
66									144							
69									147							
72									150							
75																

Bare Ground = No canopy or litter above exposed soil. **Tufted** = A cluster of elongated tillers attached at the base or growing close together. **Sod**= tillers tightly extend laterally along soil.

LPCI Phenology

Date	
Eco site	
Field number	
Transect number	
collector	
LPCI contract #	

GRASS (check 2 boxes when both warm- and cool-season grasses are present)	
1 -GREEN LEAVES BEFORE BOOT	
2- BOOT STAGE	
3- SEED SOFT DOUGH TO RIPE	
4- SEED DESIMINATION	
5- WINTER DORMANCY CURED	
FORB	
1- GREEN BEFORE FLOWERING	
2 - FULL BLOOM PETALS FALLING	
3 - FRUIT RIPENING	
4 - FRUIT RIPE TRANSITIONAL TO FALL DORMANCY	
5 - SEED DESIMINATION TRANSITIONAL TO WINTER DORMANCY	
SHRUB	
1 - GREEN LEAVES ONLY TRANSITIONAL TO FULL LEAF STAGE	
2 - FLOWERS IN BUD, GREEN FLOWERING STAGE	
3 - FLOWERS OPEN TRANSITIONAL TO FRUIT FORM	
4 - SEED MATURITY TRANSITIONAL TO FALL DORMANCY * = GREEN FRUIT WT	
5 - WINTER DORMANCY TRANSITIONAL TO CURED LEAVES ** = DRY FRUIT WEIGHT	
SAND SAGEBRUSH	
1 - BUDS SWOLLEN	
2 - EARLY LEAF DEVELOPMENT	
3 - STEM ELONGATION, FULL LEAF	
4 – FLOWERING	
5 – SEED MATURITY	
6 - EARLY LEAF SENESCENCE	
7 - DORMANCY	
SHINNERY OAK	
1 - BUD SWELL	
2 - FLOWERING CATKINS	
3 - PISTILLATE FLOWERS AND OR LATERAL BUD FORMATION IN LEAF AXILS	
4 – LEAVES < 4 CM	
5 - LEAVES > 4 CM	
6 - ACORNS DISTINGUISHED FROM CAP	
7 - ACRONS GREEN	
8 - ACORNS SEPARATE FROM CAP	
9 - DORMANCY	